Manor Ohad

8T – The Action

"We live in Heroic time; these discoveries cannot be made twice." Richard Feynman.

O Manor

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Abstract:

The author present the action of the 8T. In contrast to QFT, which forbids creation of matter, without the creation of anti-matter of equal amount, which keeps the S matrix unvaried, 8T provides a beautiful insight; matter can be created while keeping the manifold stationary. The Bosons are the violations of stationarity. The Key question is the following: can we create a stationary manifold in which both Fermions and Bosons propagate randomly while keeping the manifold stationary, we can do it for fermions as proved in the 8T thesis, is the same applicable for Bosons? Analysis of that question is presented using Ricci curvature.

Introduction

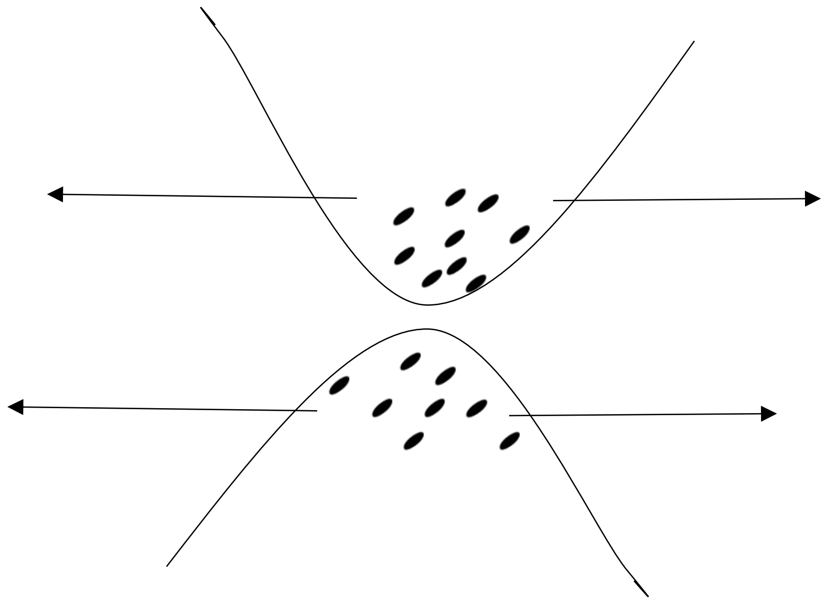
The 8T setting is a Lorentz manifold, $\mathrm{s} = (\mathrm{M}, \mathrm{g})$, with $(3{,}1)$ signature. The manifold is the connected manifold, invoked stationary, $s = s_0 \times \mathbb{R}$.. The manifold has areas of extremum curvatures that remain as they are overtime, this are yielding time invariant acceleration from them on the matric tensor M, given by two conditions below (1). The reason for the acceleration in the 8T is that the manifold is a part of an infinite packet of universes, which interact at areas of extremum curvatures, as g is the Ricci flow, and as a result flatten each other matric tensor causing it to accelerate in a time invariant rate, given by equations (1.2) and (1.1). By (1.2) those manifolds are topologically invariant. Flatness is an immediate result of this framework as given by the illustration below.

$$\frac{\partial \ell}{\partial \mathrm{s}}\frac{\partial \mathrm{s}}{\partial \mathrm{M}}\frac{\partial \mathrm{M}}{\partial \mathrm{g}}\frac{\partial \mathrm{g}}{\partial \mathrm{t}} - \frac{\partial \ell}{\partial \mathrm{s}'}\frac{\partial \mathrm{s}'}{\partial \mathrm{M}}\frac{\partial \mathrm{M}}{\partial \mathrm{g}'}\frac{\partial^2 g'}{\partial \mathrm{t}^2} = 0 \qquad (1)$$

$$\frac{\partial \mathrm{g}}{\partial \mathrm{t}} = 0 \cap \frac{\partial^2 g'}{\partial \mathrm{t}^2} = 0$$

$$\frac{\partial \ell}{\partial s_1} - \sum_{n=2}^{\infty}\frac{\partial \ell}{\partial s_n} = 0 \qquad (1.1)$$

$$\frac{\partial \ell}{\partial s_1}\frac{\partial s_1}{\partial M}\frac{\partial M}{\partial g}\frac{\partial g}{\partial t} - \sum_{n=2}^{\infty}\frac{\partial \ell}{\partial s_n}\frac{\partial s_n}{\partial M}\frac{\partial M}{\partial g}\frac{\partial g}{\partial t} = 0 \qquad (1.2)$$



The manifold experience arbitrary amount of net curvature isomorphic to prime numbers or the number one. That construction yielded the primorial coupling constants series presented in equations (1.4) to (1.43) present the first and second representation. I.e. net curvature on the matric tensor and the prime critical line.

$$F_{V=0} \quad = 8 + (1) \tag{1.4}$$

$$F_R\# = \left(8 * \prod_{V=1}^{V=R} N_V + (3) \right) + N_V = 30{:}\, 128{:}\, 850{:}\, 9254.. \tag{1.41}$$

$$N_V = 2\left(V + \frac{1}{2}\right);\ \ V \geq 0 \tag{1.42}$$

$$N_V \ \in \ \mathbb{P} \ \cup \ \ (+1)\,; \ \ \mathbb{P} \rightarrow Set\ of\ Primes$$

$$N_V \ = P_{max} \ \in [0, \mathbb{R}] \ \cup \ \ (+1) \ \ ; \ \ P_{max} \in \ \mathbb{P}$$

$$8 + (1)$$

$$[(8 * 3) + (3)] + 3 \rightarrow \left[2N_1 + \frac{1}{2}\right] + \frac{1}{2}$$

$$[(24 * 5) + (3)] + 5 \rightarrow \left[2N_2 + \frac{1}{2}\right] + \frac{1}{2}$$

$$[(120 * 7) + (3)] + 7 \rightarrow \left[2N_3 + \frac{1}{2}\right] + \frac{1}{2}$$

$$8 + (1){:}\, \big(24 + (3)\big) + 3{:}\, \big(120 + (3)\big) + 5{:}\, \big(840 + (3)\big) + 7 \ldots \tag{1.43}$$

For example, the Electromagnetic coupling term, we have proven the invariant three to be an electron by putting it in the fine structure constant formula:

$$[(24 * 5) + (3)] + 5 \rightarrow [(24 * 5) + (e)] + \gamma \quad (1.44)$$

We have described the arbitrary variations of the manifold by the term on the main equation:

$$\frac{\partial \mathcal{L}}{\partial s}\frac{\partial s}{\partial \mathrm{M}}\frac{\partial \mathrm{M}}{\partial g}\frac{\partial g}{\partial t}\delta g - \frac{\partial \mathcal{L}}{\partial s'}\frac{\partial s'}{\partial \mathrm{M}}\frac{\partial \mathrm{M}}{\partial g'}\frac{\partial^2 g'}{\partial t^2}\delta g' = 0 \quad (1.46)$$

We partitioned and discretized the arbitrary variation term and derived the existence of Fermion. In particular, we have shown that it must have an even amount of elements, which differ in sign and create nine threefold combination, and no more than two distinct elements.

$$\delta g_1 + \delta g_2 \ldots = \sum_{i=1}^{N} \delta g_i \quad (1.47)$$

$$\sum_{i=1}^{N} \delta g_i = 0 \quad (1.48)$$

In addition, with bosons, described by the term (1.49) as they were proven discrete amount of prime curvature on the matric tensor:

$$\sum_{1=1}^{M} \delta g_i > 0 \quad (1.49)$$

Up until now, reader is probability familiar with every equation presented, as those are 8T fundamentals. **From here** on out, we have a completely **new paper.** Taking the main equation (1.2), and not (1) (to avoid second derivatives) as the Lagrangian of the theory, and using integration to get to the action, the "Hamiltonian", we can reach an interesting option. The most significant difference between the 8T and QFT, if one is correct, is that matter can be created while keeping the manifold stationary. That is because matter pairs in such way that the result is no curvature, given by (1.48). Another way to put it, it is presented in sums two and three devisable to vanish into matter, the overall result is zero. Therefore, as long as matter is created in random fashion the manifold is still stationary. These are far from trivial statement and in complete contrast to Quantum Field Theory. Which in trying to keep the S matrix unvaried, as it is present an anti-matter particle to each particle of matter created. The problem with the QFT idea of anti-matter paring to each matter created, is that if that were the case, anti-matter would be found in much higher amounts, equal to matter in fact, and it would not be that rare to detect. Therefore, QFT idea in that sense is problematic, as we know that there exist an asymmetry in matter to anti-matter distributions toward the first.8T suggest matter creation and stationarity of the action at the same time, it is the Bosonic propagation, which violate the stationarity of the manifold. Those violations are the result, as you probability know by now, of the prime number feature, i.e. a number which is neither two nor three devisable, each prime is isomorphic to a distinct Boson. We have presented the idea of violations of stationarity in equations (1.8) and (1.81) for Fermions and Bosons respectively:

$$\frac{\partial \mathcal{L}}{\delta g_i} = \frac{\partial \mathcal{L}}{\partial g_i} - \frac{\partial \mathcal{L}}{\partial \dot{g}_i}\left(\frac{d}{dt}\right) = 0 \quad (1.8)$$

$$\frac{\partial \mathcal{L}}{\delta g_i} = \frac{\partial \mathcal{L}}{\partial g_i} - \frac{\partial \mathcal{L}}{\partial \dot{g}_i}\left(\frac{d}{dt}\right) > 0 \quad (1.81)$$

The subject of the action taken from that point of view turns to be quite complicated and requires additional analysis. That is it because the features of the Bosonic propagations must be taken into account. If we associate the Bosonic "fields" to independent, stable curvature spikes, as the author suggest in the 8T thesis that means that the stationarity cannot be preserved, if we keep developing the main equation using Ricci curvature:

$$\frac{\partial \mathrm{g}}{\partial \mathrm{t}} = -2Ric$$

Than the sign of (1.49) for Bosons reverse:

$$\sum_{1=1}^{M} \delta g_i > 0 \quad \longrightarrow \quad \sum_{1=1}^{M} \delta g_i < 0 \qquad (1.49.A)$$

If we require the condition of stationarity to be (1.48) than we can examine (1.49.A) as the term which does not interfere with the action as it is smaller than zero. So taken from this point of view, Bosons are not in violating the action as well as they now reversed in sign. It is just an idea of course, the author is not included the action in the 8T thesis as it is quite a different framework than QFT or General relativity. The **key question** of the subject matter, can we created a theory in which random particles of all kind appear while keeping the manifold stationary? We know we can do it for Fermions, it was proven. However, can we do it for Bosons as well? (1.49.A) also could suggest that there is a symmetry and for each violations of positive prime, there exist a negative violation represented using the Ricci curvature.

References

[1] O. Manor. "8 Theory – The Theory of Everything" In: (2021)

Manor Ohad

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